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2009

ANNUAL WATER QUALITY REPORT

TOWN OF MARANA MUNICIPAL WATER SYSTEM

(Including DEQ IDs: 10092, 10329, 10136, 10138, 10143, 10150, and 10406)

For more information about the Utilities Department, visit us at www.marana.com

June 2010

*Este informe contiene información muy importante sobre su agua de beber.
Tradúzcalo ó hable con alguien que lo entienda bien.*

THE TOWN OF MARANA MUNICIPAL WATER SYSTEM MEETS SAFE DRINKING STANDARDS

This year's Annual Water Quality Report covers the monitoring period between January 1, 2009 and December 31, 2009. This report is a snapshot of the year's water quality and the services the Town provides. We want you to understand the efforts we make to continually improve our water quality and to protect our water resources. Our goal is and always has been to provide you with a safe and dependable supply of drinking water. We are committed to ensuring the quality of your water. The water we provide meets and/or exceeds the Safe Drinking Water Standards established by the U.S. Environmental Protection Agency (EPA) and the State of Arizona's Department of Environmental Quality (ADEQ).

WHERE DOES OUR WATER COME FROM?

Our water source is groundwater from the Lower Santa Cruz portion of the Tucson Basin Aquifer. Our portion of the aquifer was created primarily from runoff from the surrounding mountain ranges of Southern Arizona along with storm water percolating through the ground along the Lower Santa Cruz and its tributaries.

The Town of Marana Municipal Water System consists of six public water systems and one non-transient non-community water system (Marana Airport). The water systems contain 19 potable wells pumping water at depths ranging from 136 to 242 feet below the surface of the earth from our aquifer. The water from those wells is stored in reservoirs where it is minimally chlorinated and pumped through pipelines to reach your home or business.

HOW DO I KNOW IF MY WATER IS SAFE?

Under the ADEQ Monitoring Assistance Program (MAP), the Town of Marana Municipal Water System, in collaboration with MAP, routinely monitors for more than 80 contaminants as required by federal and state regulations. Testing is required for synthetic organic chemicals (SOCs), inorganic chemicals (IOCs), volatile organic chemicals (VOCs), radiochemicals, lead and copper and disinfection byproducts. Bacteriological tests are required monthly.

TERMS & ABBREVIATIONS

To help you better understand the terms and abbreviations used in this report, we have provided the following definitions:

Parts per million (*ppm*) or Milligrams per liter (*mg/L*) - One part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (*ppb*) or Micrograms per liter (*mg/L*) - One part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

Action Level (*AL*) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Action Level Goal (*ALG*) - The “goal” is the level of a contaminant in drinking water below which there is no known or expected risk to health. The ALG allows for a margin of safety.

Maximum Contaminant Level Goal (*MCLG*) - The “goal” is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Contaminant Level (*MCL*) - The “maximum allowed” is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. MCLs are set at stringent levels.

Maximum Residual Disinfectant Level (*MRDL*) - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (*MRDLG*) - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Running Annual Average (*RAA*) - An average of monitoring results for the previous 12 calendar months.

Non Detect (*ND*) - The contaminant is below the detection level.

WHAT TYPE OF CONTAMINANTS MIGHT BE PRESENT IN MY WATER?

The sources of drinking water (tap and bottled) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that *may* be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive contaminants**, which can be naturally occurring or the result of oil and gas production and mining activities.

WHAT HAPPENS IF THE WATER TESTED INDICATES CONTAMINATION?

If a constituent is found to be out of compliance with the Safe Drinking Water Standards, we are required by federal and state law to notify our customers. Notifications can be made by letter, news media or through this report. If a serious situation occurs that may affect the health, safety and well-being of our residents, we will do whatever is necessary to advise our customers and find an alternate source of safe drinking water.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. You may obtain more information about contaminants and potential health effects by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

ADDITIONAL INFORMATION

Nitrates

Nitrates in drinking water at levels above 10 ppm are a health risk for infants younger than six months of age and elderly people on oxygen continually. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should seek advice

from your healthcare provider. In 2009, there were no violations with regard to nitrates.

Arsenic

While your drinking water meets EPA's standards, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic (a mineral known to cause cancer in humans at high concentrations and is linked to other health effects, such as skin damage and circulatory problems). In 2009, there were no violations with regard to arsenic.

Monitoring Assistance Program (MAP)

The Arizona Department of Environmental Quality has extended this program to ensure water suppliers serving fewer than 10,000 customers complete all monitoring requirements under the rules of the various government agencies responsible for safe drinking water. Under this agreement, the state employs an independent firm to take the required water samples and send them to a laboratory for analysis. The results are sent to the water provider and the Arizona Department of Environmental Quality. In this way, you—*our customer*—the state, and we are guaranteed that all tests are done in a timely manner.

REPORT PERIOD

All systems were tested monthly, quarterly or annually for contaminants, depending on the guidelines for each established by the EPA.

IMMUNO-COMPROMISED PERSONS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as people with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their care providers. EPA/CBD guidelines on appropriate means to

reduce the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

SYSTEM VIOLATIONS

In 2009 there were no system violations.

CHLORINATION

The Town of Marana Water Department treats its water with chlorine. Chlorine is the most commonly used disinfectant for water and saves lives by controlling waterborne diseases.

WATER HARDNESS

Arizona water passes through soils that are rich in calcium and magnesium. These harmless, tasteless minerals become completely dissolved in the water, creating what is known as hard water. Water hardness poses no health risk to consumers; however, it can create challenges around the house, such as a reduction in the cleansing ability of laundry soap and deposits left behind on bath fixtures, dishes and glassware.

WHOM DO I CONTACT FOR ADDITIONAL INFORMATION ABOUT MY WATER QUALITY?

If you have questions about your drinking water or this report, please call Mitch Beem, our Utility Superintendent, at (520) 382-2570. You may also e-mail him at mbeem@marana.com. We want to keep our valued customers informed about their water utility, and we encourage your participation in water issues. Our Utility Citizens Advisory Commission meets the second Tuesday of each month at the Marana Operations Center, 5100 West Ina Road, starting at 3 p.m. The public is welcome, but we suggest you call ahead to verify that the meeting will be held. You may also stop by our office during regular business hours 8 a.m. to 5 p.m. Monday through Friday.

Water payments may be made at the Marana Municipal Complex located at 11555 W. Civic Center Drive or our office at 5100 W. Ina Road. A night drop box is available at both locations. If you are tired of writing a check each month for your water bill, you can have it debited directly from your bank account. All you need to do is complete an application and we'll take care of the rest. Just pick up a form at our office, call us at (520) 382-2570 or visit www.marana.com. We can also take credit card payments in person or over the phone at no extra charge or you can have your bill automatically charged to your debit or credit card monthly by providing us with the card number.

Are you interested in getting involved? There are several ways you, as a citizen of the Town of Marana, can have a voice in the decisions made regarding our drinking water system. You are able to attend and participate in Town Council meetings, Utility Citizens Advisory Commission meetings and CREW (Citizen Resource & Education Workshops), which are free. These forums provide avenues for you to express your comments or concerns as well as learn how local government works. For more information regarding any of these forums, please visit www.marana.com or call our office at (520) 382-2570.

Utilities Department staff works to provide top-quality water to every tap. We ask that you help us protect our water sources as they are the heart of our community, our way of life and our children's future. We welcome your questions and suggestions as we strive to conserve water. Contact us for free brochures on drought-tolerant plants for your landscape or stop by our office on Ina Road and see the Conservation Demonstration Garden (completed May 2010), which features native vegetation and low water use plants. Use the water you need, but please don't waste it.

Thank you for allowing us to continue to provide your family with clean, quality water this year.

What water system does my water come from?

Use the table below to determine which water system serves your home. The Department of Environmental Quality (DEQ) ID is assigned by DEQ to each Public Water System (PWS). Once you locate your water system name, you can follow your system's 2009 detected regulated/unregulated contaminants by looking for the DEQ ID that corresponds to your water system in the **2009 Detected Contaminants Table**.

DEQ ID	Water System Name (PWS)	General Area
10092	Continental Reserve	Continental Reserve/Picture Rocks/Cortaro & Silverbell Rd
10136	Palo Verde	Twin Peaks Rd & Clayton
10138	Airline/Lambert	Avra Valley Rd/Airline Rd/Lambert Ln/Saguaro Springs/Silverbell Rd & Linda Vista
10143	Cortaro Ranch	Oshrin Park/Cortaro Crossing/Shady Grove/Red Rock Ridge/Willow Ridge
10150	Marana/Cortaro (North Marana)	Gladden Farms/Rancho Marana/Honea Heights/Amole Circle/San Lucas/Yoem Pueblo/Warfield Circle
10329	Hartman Vistas	Hartman Vistas/Hartman 10/Oasis Hills
10406	Airport	Marana Regional Airport

2009 DETECTED CONTAMINANTS TABLE

Disinfection Byproducts										
DEQ ID	Contaminant	MCL	MCLG	Units	Average	Range	Highest RAA	Violation (Yes/No)	Sample Date/Year	Likely Source of Contamination
10092	Haloacetic Acids (HAA)	60	N/A	ppb	4.90	ND - 11.00	11.00	No	08/09	By-product of drinking water disinfection
10138	Haloacetic Acids (HAA)	60	N/A	ppb	1.70	ND - 6.90	6.90	No	09/09	
10150	Haloacetic Acids (HAA)	60	N/A	ppb	0.17	ND - 1.90	1.90	No	08/09	
10406	Haloacetic Acids (HAA)	60	N/A	ppb	6.16	ND - 9.00	9.00	No	08/09	
10092	Total Trihalomethanes (TTHM)	80	N/A	ppb	9.70	ND - 17.80	17.80	No	08/09	
10138	Total Trihalomethanes (TTHM)	80	N/A	ppb	10.40	ND - 78.10	78.10	No	09/09	
10143	Total Trihalomethanes (TTHM)	80	N/A	ppb	0.55	ND - 3.84	3.84	No	08/09	
10150	Total Trihalomethanes (TTHM)	80	N/A	ppb	2.80	ND - 11.90	11.90	No	08/09	
10329	Total Trihalomethanes (TTHM)	80	N/A	ppb	4.17	4.17	4.17	No	08/09	
10406	Total Trihalomethanes (TTHM)	80	N/A	ppb	38.00	ND - 59.80	59.80	No	08/09	

Lead and Copper										
DEQ ID	Contaminant	AL	ALG	Units	90 th Percentile	Number of Sites over AL	Violation (Yes/No)	Sample Date/Year	Likely Source of Contamination	
10136	Copper	1.3	1.3	ppm	0.100	0	No	07/09	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	
10092	Copper	1.3	1.3	ppm	0.470	0	No	09/09		
10406	Copper	1.3	1.3	ppm	0.190	0	No	06/09		
10138	Copper	1.3	1.3	ppm	0.260	0	No	07/09		
10143	Copper	1.3	1.3	ppm	0.028	0	No	06/09		
10329	Copper	1.3	1.3	ppm	0.054	0	No	07/09		
10092	Lead	15	0	ppb	7.00	0	No	09/09	Corrosion of household plumbing systems; erosion of natural deposits	
10138	Lead	15	0	ppb	12.00	0	No	07/09		
10406	Lead	15	0	ppb	5.70	0	No	05/09		

Disinfectants									
DEQ ID	Contaminant	MRDL	MRDLG	Units	Range	Level Average	Violation (Yes/No)	Year Tested	Likely Source of Contamination
10092	Chlorine Residual	4	4	ppm	.20 - .80	0.43	No	2009	Water additive used to control microbes
10136	Chlorine Residual	4	4	ppm	.20 - .60	0.43	No	2009	
10138	Chlorine Residual	4	4	ppm	.30 - .60	0.40	No	2009	
10143	Chlorine Residual	4	4	ppm	.35 - .60	0.45	No	2009	
10150	Chlorine Residual	4	4	ppm	.34 - .60	0.47	No	2009	
10406	Chlorine Residual	4	4	ppm	.10 - .60	0.35	No	2009	
10329	Chlorine Residual	4	4	ppm	.30 - .70	0.45	No	2009	

Inorganic Contaminants									
DEQ ID	Contaminant	MCL	MCLG	Units	Level Detected/Range	Highest Detect	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10329	Arsenic	10	0	ppb	1.00	1.00	No	12/09	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
10406	Nitrate (as Nitrogen)	10	10	ppm	<1.00 - 0.59	0.59	No	04/09	Runoff from fertilizer use; leaching from septic of natural deposits tanks, sewage; erosion
10136	Nitrate (as Nitrogen)	10	10	ppm	3.20	3.20	No	02/09	
10138	Nitrate (as Nitrogen)	10	10	ppm	2.80 - 4.20	4.20	No	02/09	
10143	Nitrate (as Nitrogen)	10	10	ppm	1.60 - 2.80	2.80	No	02/09	
10150	Nitrate (as Nitrogen)	10	10	ppm	0.91 - 7.70	7.70	No	12/09	
10092	Nitrate (as Nitrogen)	10	10	ppm	4.20	4.20	No	02/09	
10329	Nitrate (as Nitrogen)	10	10	ppm	1.10	1.10	No	12/09	

Volatile Organic Contaminants									
DEQ ID	Contaminant	MCL	MCLG	Units	Level Detected/Range	Highest Detect	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10138	Xylenes	10	10	ppm	.0015 - .0067	0.0067	No	02/09	Discharge from petroleum factories; discharge from chemical factories
10138	Ethylbenzene	700	700	ppb	1.30 - 1.70	1.70	No	08/09	Discharge from petroleum refineries

Radionuclides									
DEQ ID	Contaminant	MCL	MCLG	Units	Level Detected/Range	Violation (Yes/No)	Sample Date	Likely Source of Contamination	
10092	Combined Uranium	30	0	µg/L	21.9 ± 2.0	No	02/09	Erosion of natural deposits	
10138	Combined Radium	5	0	pCi/l	0.4 ± 0.1	No	04/09		

Unregulated Contaminants									
DEQ ID	Contaminant	MCL	MCLG	Units	Level Detected/Range	Highest Detect	Violation (Yes/No)	Sample Date	Likely Source of Contamination
10138	Sodium	N/A	N/A	ppm	65	65	No	02/09	
10092	Sodium	N/A	N/A	ppm	83	83	No	02/09	
10329	Sodium	N/A	N/A	ppm	27	27	No	12/09	
10092	Nickel	N/A	N/A	ppm	0.0051	0.0051	No	02/09	